others, are reproduced in the Society's series of astronomical photographs.

One of his most important memoirs was entitled "Experimental Investigations on the Effective Temperature of the Sun"; in this he found that the effective temperature could not differ much from 8000° C. In a second paper on the same subject, taking the lowest estimate of terrestrial atmospheric absorption, and correcting for solar atmospheric absorption, the value finally reached is 6590° C. Other important publications were on "The Absorption of Light in the Solar Atmosphere"; "The Temperature of the Carbons in the Electric Arc"; "The Effect of Pressure of the Surrounding Gas on the Temperature of the Crater of an Electric Arc Light"; "Radiation from a Perfect Radiator"; "The Thermal Radiation from Sun-spots." In the last-mentioned paper he arrives at the conclusion that a sun-spot is not a cool, depressed region, but rather a more intensely heated one, raised above the photosphere. The papers published before 1900 were re-issued in a volume called "Astronomical and Physical Researches made at Mr. Wilson's Observatory, Daramona, Westmeath." This was illustrated with some of his celestial photographs. He observed the total solar eclipse of 1900 May 28 at Placencia (Spain), and his results were published in the *Transactions* of the Royal Irish Academy and the Royal Dublin Society.

Dr. Wilson married in 1886 Caroline Ada, daughter of Captain R. C. Granville, of Grand Pré, Biarritz, who survives him. He leaves also a son and two daughters.

He was elected a Fellow of the Royal Society in 1896, and received the honorary degree of D.Sc. from Dublin University in 1901. He became a fellow of the Royal Astronomical Society 1875 December 10.

Carl Venceslas Zenger was born 1830 December 17 at Komotau, Bohemia, and educated at the University of Prague. From 1851 to 1853 he was an Assistant at the Observatory; in 1853 he was appointed Professor in the Gymnasium at Neusohl, Hungary. In 1861 he returned to Prague as Professor of Physics in the Polytechnic Institute. In 1864 he was appointed an ordinary Professor at the Technical High School, of which in 1872 he became Rector. In 1899 he became Emeritus Professor of Astrophysics. He was a voluminous writer on Meteorology, Spectroscopy, and Astronomy. The majority of his papers appeared in the *Comptes Rendus*, and in the Journal of the Prague *Wissenschaftliche Gesellschaft*, but he contributed also a few to the *Monthly Notices* and to the *Philosophical Magazine*. He died January 22nd, 1908.

Professor Zenger was elected a Fellow of the Society 1875 June 11.

John Macon Thome was born at Palmyra, Pennsylvania, U.S.A., on August 22, 1843. He received a college education, and in 1870 took the degree of D.Sc. at the Lehigh University. In 1870 Dr. B. A. Gould was appointed by the Argentine Government to

establish a national astronomical observatory at Cordoba, where he arrived in September of that year. The selection of Cordoba as an especially desirable place was chiefly due to Lieutenant Gilliss, whose astronomical mission to Santiago de Chile, 1850–1852, enabled him to form a sound judgment as to the relative advantages of different points in South America for astronomical purposes. Before leaving the United States, Dr. Gould had engaged four assistants, of whom Dr. Thome was the senior, and they arrived at Cordoba at the end of September 1870. At this time Dr. Thome possessed no special astronomical training or experience. His subsequent career and the excellent work that has been accomplished at the Cordoba Observatory show the wisdom of Dr. Gould's selection. Speaking in after years of his assistants, Dr. Gould said he had been singularly favoured. "Their unselfish devotion to the great undertakings in which they took part, their loyalty, trustworthiness, and ability, have been beyond all praise."

In Dr. Gould's absence in 1874 and 1876 the observatory was left in charge of Dr. Thome, and on Gould's resignation in 1885 Thome was appointed Director.

Thome's directorship of the Cordoba Observatory began under most depressing and disadvantageous circumstances. He was practically alone, for Mr. Tucker, his one assistant, had only just joined him, and the condition of things was aggravated by the disastrous financial crisis which shortly ensued in Argentina, which rendered all his efforts to increase the staff, by engaging men abroad upon a paper basis, without result. In his own words, "the effort to maintain the activity and honourable record of the institution upon the smaller salaries consequent upon a vanishing budget, which cut off from me all hope of obtaining trustworthy help abroad, has been attended with painful experiences, and I have repeatedly been compelled to stop and train new men, and to repeat operations performed by inefficient and negligent or designing assistants."

But Thome's zeal and devotion were quite undeterred by such adverse conditions, and he determined to undertake the great task of continuing the *Durchmusterung* of Argelander and Schönfeld to embrace nearly the whole of the southern heavens. For this work he employed a portable equatorial with an object-glass by Alvan Clark of 12·5 cm. aperture and 168 cm. focal length, and the plan of operation was similar to that adopted at Bonn, except that transits were recorded chronographically instead of by the particular eye and ear method of Argelander.

The Cordoba *Durchmusterung* has been completed for the region from 22° to 65° south declination. The results are contained in four volumes (of which three have at present been distributed), and give the positions and brightness down to the 10·5 magnitude of 630,000 stars, resulting from over 1,800,000 observations. Eighteen charts, containing 550,000 stars, have also been prepared. The larger part of the observations for this great and valuable work were made by Thome. Indeed, for the four years 1894–1897

he made every observation himself, with the assistance of Mrs. Thome and Mr. Schuldt as recorders. It is impossible not to speak in the highest terms of the ability and untiring devotion of Thome in prosecuting and accomplishing this important and valuable contribution to astronomy. He will always occupy an honourable place in the roll of great workers in that science.

In the year 1900 the Paris Astrographic Congress resolved to ask the Cordoba Observatory to take over the photographic zone between the 23rd. and 31st. degrees of south declination, which had been previously assigned to the observatory at La Plata. This was accepted by Thome, and by the beginning of 1902 his observatory was equipped with an astrographic telescope by Gautier and all necessary apparatus; since then the work has been prosecuted with the Director's characteristic energy.

Though no paper by Thome appears in the publications of this Society, he contributed various papers to astronomical journals on comets, variable stars, minor planets, etc.

He died at Cordoba rather suddenly on September 27, 1908.

He was elected a Foreign Associate November 10, 1899.

E. B. K.

Charles Augustus Young was born on December 15, 1834, at Hanover, New Hampshire, U.S.A., a small town chiefly notable as the site of Dartmouth College—one of the older institutions of learning of New England—in which his grandfather and his father successively occupied the Chair of Natural Philosophy, and from which he himself received the degree of Bachelor of Arts in 1853, graduating with distinction.

After four years spent in teaching the classics and in theological studies, he accepted the post of Professor of Mathematics and Natural Philosophy at Western Reserve University in Ohio, which he held for nine years. In 1862 he was for four months captain in one of the many volunteer regiments of the Federal army, returning after service in the Mississippi swamps with impaired health, which was never quite restored.

In 1868 he returned to his own college—Dartmouth—as Professor of Natural Philosophy and Astronomy, and in 1877 he accepted a call to the Professorship of Astronomy at the College of New Jersey (now Princeton University), which he held for twenty-eight years. Retiring in 1905 on account of failing health and strength, he was appointed Professor-Emeritus, but returned to his old home in New Hampshire, where he died, after a short illness, on January 3, 1908.

At the time when Professor Young's scientific career began, the spectroscope was just taking its place as a new and powerful instrument of astrophysical research. In spite of heavy duties as a teacher, he did not content himself with expounding the new discoveries to his students, but engaged actively in solar research.

Observing the total eclipse of 1869 at Burlington, Iowa, he was able to demonstrate for the first time the solar character and